

## Conversation Starters on Nuclear Energy

As climate advocates, your knowledge and expertise are essential to sharing the benefits of clean, nuclear energy with the public and policymakers. Many of these issues are complex to those outside the industry, and part of our mission is to make these topics understandable and relatable to you and your broader community. Below are some helpful points to start your conversations about nuclear energy with your friends, family, neighbors and others in your community.

### Why we advocate for nuclear energy

Nuclear energy matters. It plays a vital role in overcoming our climate challenges, meeting our nation's electricity needs, powering local economies and protecting the environment. The United States' nuclear plants produce clean energy 24 hours a day, seven days a week, rain or shine. The topics outlined below build on these areas for a brighter energy future.

### CLIMATE & ENVIRONMENT

Environmental and climate advocates are some of the most passionate supporters of nuclear energy. Thanks to its carbon-free properties, nuclear energy is an environmentally friendly energy source, but many people are unfamiliar with these benefits. Nuclear energy is responsible for producing nearly half of the clean energy in the U.S., making it essential to meeting our climate goals and building a clean energy future.

Nuclear energy produces clean electricity 24 hours a day, seven days a week, all day, every day, rain or shine. That makes nuclear energy the perfect partner to wind and solar to ensure reliable power at any time of the day and in every weather condition.

Nuclear energy plays an essential role in our country's clean energy future. Nuclear energy plants do not emit any carbon dioxide and produce nearly half of the nation's clean energy.

Every year, nuclear-generated electricity saves our atmosphere from more than 437 million metric tons of carbon dioxide emissions that would otherwise come from fossil fuels. That's the same as taking more than 100 million passenger vehicles off the road, which is nearly as many passenger vehicles currently on the road in the U.S.

Nuclear energy is the clean energy source you can count on to meet rising electricity demands while boasting a small land footprint. To provide the same amount of carbon-free electricity as produced by a typical 1,000 MW nuclear facility, you would need 30x the land to build a solar plant.

States that have closed nuclear plants have seen significant increases in carbon emissions. In California, closing the San Onofre plant at the beginning of 2012 contributed to a 43% increase in carbon emissions from in-state electricity generation over the following year, and Vermont witnessed a 19% increase from electricity generation in 2015 following the closure of the Vermont Yankee plant in 2014.

## ELECTRICITY

It's time to flip a switch. Talking about nuclear energy's contributions to our electricity supply can help others learn where their power comes from and why it is important to protect this valuable resource. Nuclear plants are essential to ensuring a reliable energy supply and meeting our growing electricity demands. To meet the moment, nuclear energy must continue to play a vital role in our clean energy future.

Many people take for granted the inherent reliability that nuclear energy provides to our electricity supply. When demand for electricity spikes during summers, winters and extreme weather situations, nuclear energy fills the gap created as other fuel supplies are exhausted, inaccessible or unusable.

The 94 nuclear reactors around the country generate more than 18% of our total electricity. In several states, nuclear plants generate more electricity than any other energy source, including natural gas, coal, solar, wind or hydrogen.

The U.S. Department of Energy's Energy Information Administration projects that U.S. electricity demand will rise 27% by 2050. To ensure that supply can meet these growing demands and that these sources are diverse and reliable in any case of extreme weather, many of the new plants in the U.S. must be nuclear.

In 2023, U.S. nuclear plants operated at full capacity 93% of the time, compared to 23% for solar, 34% for wind and 62% for gas. In fact, for more than 20 years, U.S. nuclear plants have averaged at full capacity over 90% of the time. What does this mean? Rain or shine, nuclear plants are up and running and keeping clean power flowing to communities across the country.

## PUBLIC PERCEPTION

More people are recognizing the benefits of nuclear power to our energy system. We can help people understand that support for nuclear is supported across many demographics, a clear sign that people are open to learning more. Public support in favor of nuclear energy has shifted greatly in the U.S., around the world and across political parties. We're seeing this support for many reasons: meeting climate goals, bolstering energy independence and answering the growing energy demand.

Recent surveys show a shift in public support in favor of nuclear energy — including a Gallup poll that found Americans' support was at the highest level in a decade. A survey by Stanford found that 4 out of 5 Gen Z voters support nuclear energy as part of an energy mix, alongside renewables.

An international survey by the Potential Energy Coalition showed support for nuclear energy outnumbers opposition in all eight countries surveyed. Taking an average of all the countries, strong support for nuclear outweighs strong opposition 5:1.

Support for nuclear spans party lines. Leaders across political parties agree that nuclear energy is critical to meet our climate goals, bolster economies and gain energy independence. In the U.S., 20 states — almost half the country — introduced pro-nuclear policies and initiatives.

## ECONOMIC IMPACT AND JOBS

Jobs and the economy are a great starting point for highlighting the key benefits of nuclear energy, and something everyone can relate to on a personal level. Nuclear plants are important economic engines in the communities where they operate, creating hundreds of well-paying jobs and supporting local economies and infrastructure.

Each nuclear plant employs between 500 and 800 workers. Plant employees earn more than twice the national median wage and earn over 50% higher wages than the energy industry median wage.

The nuclear industry pays more than \$12 billion in local, state and federal taxes annually across the country. These tax dollars are critical to supporting state and local infrastructure, including funding for schools, roads, parks and other important government services.

In total, the U.S. nuclear industry adds \$60 billion to the country's GDP.

## SAFETY

Nuclear energy facilities are among the safest industrial facilities in the world, thanks to highly trained personnel, stringent federal regulations, multiple automated safety systems and extensive security operations.

The independent U.S. Nuclear Regulatory Commission (NRC) holds nuclear energy plants to the highest safety and security standards, with NRC inspectors on-site at each nuclear energy facility every day.

Multiple studies by leading organizations, such as the National Cancer Institute and the United Nations Scientific Committee on the Effects of Atomic Radiation, have shown that U.S. nuclear plants have no negative impact on the health of neighboring communities.

The nuclear industry has safely managed its used fuel for more than six decades, building a comprehensive system for managing used fuel in the short- and long-term that keeps both the public and the environment safe.

Spent fuel is enclosed inside steel and concrete containers at secure storage facilities that are fortified against extreme weather events like earthquakes, fires and hurricanes. So, the industry and the communities we serve can rest assured that spent fuel is well-guarded in fortified, weatherproof containers.

All the used fuel produced by the U.S. nuclear energy industry in over 60 years of operations would fit comfortably inside one big box distribution warehouse. In fact, if you powered your entire lifetime with clean nuclear energy, all the used fuel would fit in a soda can.

## ENERGY INDEPENDENCE

By adding nuclear energy to a country's portfolio, countries can advance sustainability goals while protecting their national and energy security. A strong nuclear industry gives countries the ability to control their energy supply and reduce reliance on bad actors.

Being able to provide the necessary amounts of energy, without disruption, for households and businesses is crucial to a state's security and safety. Nuclear energy can play a significant part in an energy-independent future, making nations less vulnerable to bad actors seeking to control a country's energy supply.

Global demand for nuclear energy is on the rise as nations strive to be more energy independent. Countries that have long relied on coal and natural gas are seeing the value of building and maintaining their own nuclear plants. This is most apparent as Ukraine and much of Eastern Europe have taken steps to sever energy dependence on Russia.